



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/571,065

03/08/2006

Hiroshi Onda

4074-26

2455

23117 7590 04/15/2009
NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

VILLALUNA, ERIKA J

ART UNIT

PAPER NUMBER

2852

MAIL DATE

DELIVERY MODE

04/15/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/571,065	Applicant(s) ONDA ET AL.	
	Examiner ERIKA VILLALUNA	Art Unit 2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-20 and 25-27 is/are rejected.
- 7) ☒ Claim(s) 21-24 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 17 and 26 are objected to because of the following informalities:

“disposed of” should be amended to read - - disposed at - -.

Claim 25 is objected to because of the following informalities: “wherein each bar magnet has a single magnetic pole of either N or S” is not possible as a magnet always has two magnetic poles. It is assumed applicant intended to recite “wherein each bar magnet has a single magnetic pole of either N or S **directly facing the rotating non-magnetic sleeve**” and for the purpose of applying prior art has been treated as such. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 9, 11, 13, 15, and 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Endo et al. (JP 2002-072662 A).

Regarding claims 9 and 13, Endo et al., herein Endo, discloses an image forming device (copying machine, printer, facsimile machine; JPO machine translation, para. [[0001]) comprising: a developing device (fig. 1) arranged to develop an electrostatic latent image comprising: a stirring roller (21) having stirring blades (fig. 2) arranged to stir a developer; a developing roller (23) arranged to transfer the developer to an

Art Unit: 2852

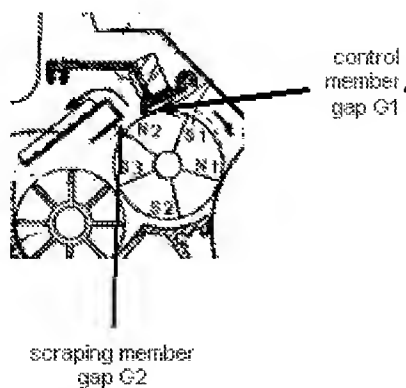
electrostatic latent image; a control member (24) arranged to control an amount of developer transferred to the electrostatic latent image by said developing roller; and a reflux plate (26) arranged to flow back excess developer by controlling of said control member to said stirring roller (para. [0014], ll. 9-11), wherein one end portion (bottom left portion of plate 26; fig. 1) of said reflux plate is disposed in a vicinity of an outer periphery of said stirring roller (bottom left portion of plate 26 is in vicinity of roller 21), and a part of the developer stirred by said stirring roller flies toward said reflux plate, wherein said one end portion of said reflux plate is disposed above a fly peak point in a vertical direction of said one end portion of the developer provided by a rotation of said stirring roller (bottom left portion of plate 26 is disposed above an area where developer flies), wherein said one end portion of said reflux plate is disposed at a position where a plane passing through a rotation center axis of said stirring roller crosses said reflux plate at right angles (a plane passing through a rotation center axis of roller 21 crosses plate 26 at right angles), and wherein an inclination angle of said reflux plate is larger than an angle of repose of the developer (inclination angle of plate 26 is required to be larger than an angle of repose for plate 26 to perform the desired function of guiding surplus developer from to roller 21; para. [0015], ll. 14-16).

Regarding claims 11 and 15, Endo supply discloses a developer supplying portion (toner replenishment; para. [0017], ll. 5-10) arranged to supply the developer, wherein said stirring roller is disposed between said developer supplying portion and said developing roller (roller 21 is disposed between supplying portion and roller 23), and wherein said one end portion of said reflux plate (26) is disposed in a vicinity of an

Art Unit: 2852

outer periphery on said developer supplying portion side of said stirring member (bottom left portion of plate 26 is disposed in the vicinity of the developer supplying portion).

Regarding claims 17-20, Endo discloses a scraping member (bottom right corner portion of plate 26) physically attached to said reflux plate (26) at a vicinity of said reflux plate disposed of an outer periphery of said developing roller (26 is disposed at an outer periphery of developing roller 23), wherein said scraping member faces said developing member (bottom right corner portion of plate 26 faces developing roller 23) wherein said scraping member is integrally formed with said reflux plate (bottom right corner portion of plate 26 is integrally formed with plate 26); wherein a gap (G2) exists between said scraping member and said developing roller (a gap exists between bottom right corner portion of plate 26 and developing roller 23); wherein the gap G2 is a second gap, wherein a first gap (G1) exists between said control member (24) and said developing roller, and wherein a relationship $G1 < G2$ holds true (gap between bottom right corner portion of plate 26 and developing roller 23 is larger than a gap between regulating board 24 and developing roller 23). See annotated figure below.



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10, 12, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Kawai et al. (JP 09-068869 A).

Regarding claims 10, 12, 14, and 16, Endo discloses the invention as set forth above.

Endo is silent on developer characteristics.

Kawai et al. teaches developer includes magnetic powder having an average grain diameter of 65 μm or smaller (50-130 μm) and toner having an average grain diameter of 7.5 μm or smaller (6-10 μm).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the developing device of Endo with the developer characteristics of Kawai et al. to provide an image forming device executing high-image quality. See Kawai et al., Abstract, Problem To Be Solved.

Claims 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al. (JP 2002-072662 A) in view of Kamezaki et al. (JP 63-271487 A).

Regarding claims 25-27, Endo discloses a plurality of magnets (magnetic poles shown in fig. 4) disposed in a radial manner in a non-rotating magnetic roller (23 is a

Art Unit: 2852

non-rotating magnetic roller), and a rotating non-magnetic sleeve (pivotal tubed sleeve) fitted outside of said non-rotating magnetic roller (JPO machine translation, par. [0012], ll. 9-12); a scraping member (bottom right corner portion of plate 26) physically attached to said reflux plate at a vicinity of said reflux plate disposed of an outer periphery of said developing roller (26 is disposed at an outer periphery of developing roller 23); and a photo sensitive drum (1; fig. 1) arranged for developing a latent image, wherein one of said plurality of magnets (N1) faces said photo sensitive drum and another one of said plurality of magnets (N2) of same magnetic polarity faces said scraping member; wherein the magnetic pole N1 (N1; fig. 1) of the magnet facing the photosensitive drum (1) is displaced by a predetermined angle relative to a straight line passing through a center of said photo sensitive drum and said developing roller (23); wherein the predetermined angle is substantially 3.0° (pole N1 is displaced by some predetermined angle which is substantially 3.0°). See Fig. 1.

Although Endo clearly discloses a plurality of magnets in a developing roller, it is silent as to the specific structure of each magnet.

Kamezaki et al. teaches a developing roller (23) with a plurality of bar magnets (13a-13e; fig. 1) having rectangular cross sections disposed in a radial manner in a non-rotating magnetic roller, and wherein each bar magnet has a single magnetic pole of either N or S directly facing the rotating non-magnetic sleeve (see magnetic poles of fig. 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Endo with the bar magnets of Kamezaki et al. for the benefit of ease in manufacturing.

Allowable Subject Matter

Claims 21-24 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art does not disclose or suggest “wherein the second gap G2 is a minimum gap between said scraping member and said non-magnetic sleeve, wherein one of the plurality of bar magnets faces the second gap G2, and wherein a relationship $G1 < G2 \leq 0.8 Dm$ holds true where Dm is a width of said bar magnet facing the second gap G2” in combination with the remaining claim elements as set forth in claims 21-24 and 28.

Response to Arguments

Applicant's arguments filed 12/3/08 have been fully considered but they are not persuasive.

Applicant argues Endo et al. "makes no mention of fly peak point" and "is completely silent whether the bottom left portion of the direction bard 26 is disposed above the fly peak point of the developer." Response p. 11. Applicant further argues, “to the extent that the drawings alone were relied upon, the reliance is improper.” Response, p. 12. Contrary to applicant's arguments, Fig. 4 of Endo et al. clearly shows toner particles flowing in a direction down past plate 26 as indicated by a directional

arrow. Plate 26 must be disposed above a fly peak point of developer and an inclination of such plate being larger than an angle of repose of developer is inherent for the intention of plate 26 which is to guide developer back down to stirring member 21 (Endo et al., par. [0014], ll. 9-11. Furthermore, it is noted many factors influence a “angle of repose” such as circularity of toner particles and frictional force of the surface of a reflux plate.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIKA VILLALUNA whose telephone number is (571)272-8348. The examiner can normally be reached on M-F 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David M. Gray can be reached on (571) 272-2119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David M Gray/
Supervisory Patent Examiner,
Art Unit 2852

EV